Liebert®

NFINITY™

HIGH AVAILABILITY POWER PROTECTION

EMERSON
Network Power

The Problem Is That You Depend On Your Network More Than Ever

The digital lifeblood of many organizations - computers, servers, phones, datacom links-now resides on networks…outside of the traditional "glass house" protection. This may make companies more flexible and responsive, but it also makes them far more vulnerable to power problems, and the threat of catastrophic losses in sales, customers, pro ductivity…your business lifeblood.

The Solution Is A UPS Designed Like Never Before

Now for the first time, your can achieve the highest levels of UPS reliability in a system that is sized to protect network applications. The Liebert Nfinity UPS is designed for use with workstations, servers, networks, telecommunications equipment or other sensitive electronics. It provides continuous, high-quality AC power to your mission-critical systems, protecting them from any power aberrations due to blackouts, brownouts, surges or noise interference. The Nfinity power system is a scalable 4 to 16 kVA UPS, designed with N+x parallel redundancy to provide a fault-tolerant network of power protection formaximum systems availability. Its modular design makes Nfinity the most adapt able UPS on the market, offering easy upgrades and servicing.

Scalability Is Just The Start Of The Value

- Configure the system that's right for you today and tomorrow
- Everything you need shipped complete, ready for final connection

Intelligence Means Maximum Performance

- Power responsiveness
- The ability to communicate
- Self diagnosis

Highest Levels Of Redundancy Mean Maximum Systems Availability

- Redundancy at all the critical points of UPS operation
- Maintainability without shutdown

Liebert Puts It All Together In The Nfinity UPS System

It looks and works like no UPS we've offered before. Nfinity's unique frame design houses all of the modular system components. It contains bays to hold the power modules, battery modules and system control modules. The modules offer hotswap capability, making it easy to add capacity or replace modules. The Nfinity class of power protection offers a variety of advantages.

The Right Size For Your Network Protection Plans

Nfinity's modular design was devised to provide easy scalability to users as their power demands grow. By simply installing additional power or battery modules, you can expand your current system, extend yourbackup runtime or add redundancy.

Scalability Provides The Flexibility To expand

Nfinity's patent-pending frame design provides the user with the maximum adaptability that is demanded in today's ever-changing network environment. Because Nfinity is scalable for redundancy, power capacity or battery run time, you have greater flexibility in how you can use the system. Configurations can be cost-effectively upgraded without re-investing in a new system or installation.

Longer Battery Run Time

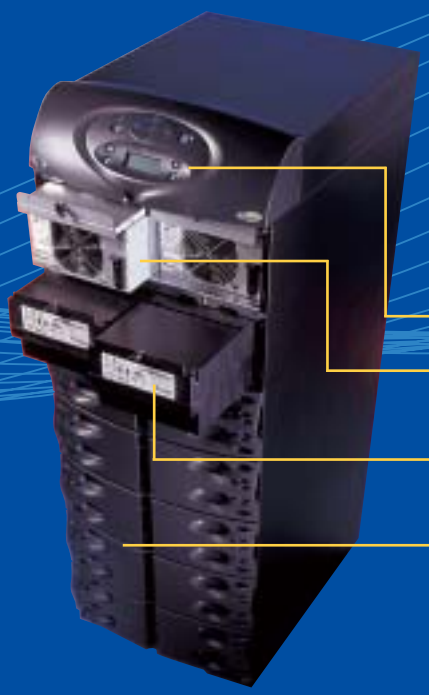
The system's flexible frame design allows battery backup times to be customized to customer needs while maintaining a smaller footprint. To extend run times, just add battery modules. Nfinity also has a faster recharge time than similar units.

Hot-Swappable

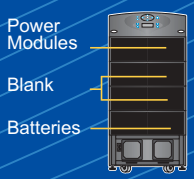
Hot-swappable modules allow you to add or replace power, battery and control modules without shutting the load down or affecting power to it. In redundant mode, this means no downtime for repair. Nfinity's hot-swappable modules also make it easy for the user to handle basic service.

Cabinet Stands Small, Stays Small

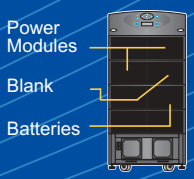
Nfinity's compact, efficient design allows you to pack more power and battery capability into a much smaller sized unit, so it takes up less of your valuable floor space.



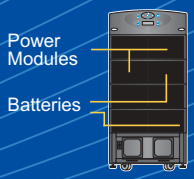
Initial System
4 kVA Redundant



Upgrade
System Capacity
8 kVA Redundant



Extend System
Run Time
8 kVA Redundant



The system control module provides communications and control for the unit.

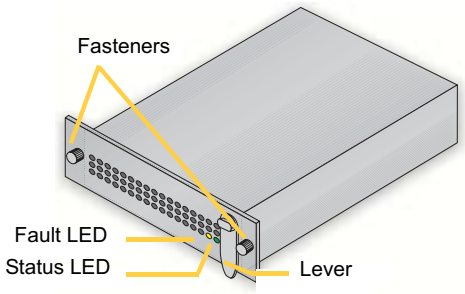
The system utilizes independent 4 kVA power modules. Up to four power modules can be operating at one time.

Each battery module is composed of ten individual 12-volt batteries encased in a plastic housing.

Power and battery modules are housed in identical bays within the frame. Power modules must be contained in the top half of the frame, while battery modules can be utilized in any of the bays. This allows battery back-up times to be configured to customer needs.

Fault-Tolerant Dual Control Modules

User Interface Module



System Control Module

IntelliControl™ Module - The system control module works with the user interface to provide vital information about the condition of the power and battery modules. The use of a paired system control provides full systems functionality in the event of any single failure and ensures that operations and communications are always available.

Communications Capability

The Liebert Nfinity UPS incorporates extensive firmware designed to provide a comprehensive range of control and operating information, as well as communications capability.

User Interface Control Panel

The user interface module is the main source of communication between the Nfinity UPS and the user. It features an easy-to-read LCD display and LED mimic diagram. The control panel informs the user of the status of the UPS, including the power and battery modules, and allows you to configure the system to fit specific needs or preferences. You can also review the event log and even receive instructions on replacing modules.

Redundant Monitoring Options

Dry contacts and a serial communications port are standard. The unit also includes four Intellislot™ ports for multiple user options including:

- SNMP cards that allow the Nfinity to communicate with an Ethernet network.
- MultiPort4 cards that enable up to four client computers to monitor UPS status.
- Relay contact cards to provide contact closures or remote monitoring of alarm conditions.
- The system also communicates to and monitors internal and extended battery cabinets.

Flexible Power Modules Keep Your Business Online

Intelligent Power Modules - provide protection against power outages, spikes, surges, noise, and sags. Designed in 4kVA "building blocks," they utilize patent pending current sharing technology that ensures premium quality power. Nfinity power modules feature a power factor corrected (PFC) rectifier to create a sinusoidal input current waveform. This allows the system to use utility power more efficiently and reduces reflected distortion. A true on-line system, Nfinity provides continuous, regenerated sinewave output power.

Nfinity is a 4 to 16 kVA UPS designed with N+x parallel redundancy to provide a fault tolerant network of power protection for maximum systems availability. Redundant Power Modules - parallel redundancy is achieved by adding extra powermodules that equally share the electrical load.

Wider Input Voltage Window

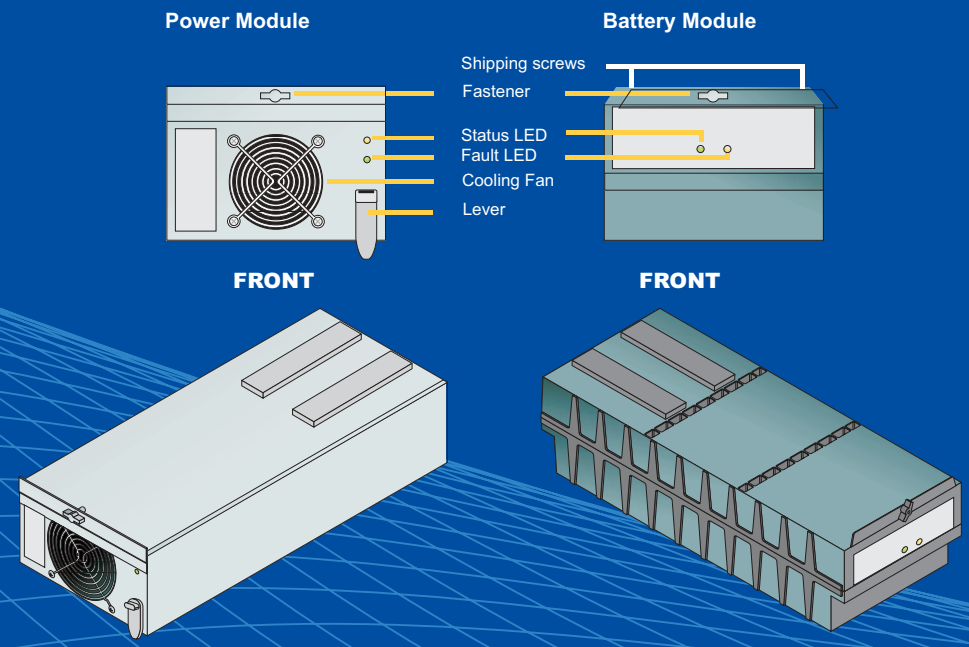
A wider, variable input voltage range minimizes transfer to battery to increase battery life. For lighter loads, low line transfer can range down to 110V.

Generator Compatible

Full time output voltage and frequency regulation is provided - a necessity for sensitive electronic equipment and a must for sites with back up generators.

Highest Overload Capability

Nfinity offers the highest overload capability of any system in its class - capable of sustaining 110% of the system's rated load for an extended period of time.



Under normal operation, the Status LED (green) will blink and the Fault LED (amber) will be off.

Longer Runtimes For Maximum Availability

IntelliBattery™ Module - Nfinity's innovative battery module continuously monitors the battery's voltage, current, and temperature to determine the state of its batteries and predict performance. Each module contains an intelligent battery sensing circuit that will take it off-line if a problem is detected, so as not to affect the pefor mance of other good battery modules in the system.

Extended Battery Cabinets

The Nfinity extended battery cabinet is available when extra run time is critical to your protected loads. This unit has 12 bays that accept up to 12 standard Nfinity intelligent battery modules, allowing you to add battery capacity as needs change. A built-in microprocessor in each battery module provides the intelligence and communication capability to allow the module to automatically remove itself from the critical DC bus if necessary. The extended battery cabinet reports and tracks individual module capacity, temperature and charge level, as well as other data and reports this information to the Nfinity system control.

Nfinity Battery Run Times (min.)

		Quantity of Battery Modules											Quantity of Extended Battery Cabinets			
Load VA	Load Watts	1	2	3	4	5	6	7	8	9	10	11	1	2	3	4
20,000	14,000	-	-	-	-	7	9	12	-	-	-	-	25	51	75	99
19,500	13,650	-	-	-	-	7	9	12	-	-	-	-	25	56	80	104
19,000	13,300	-	-	-	-	7	9	13	-	-	-	-	26	57	81	105
18,500	12,950	-	-	-	-	8	11	13	-	-	-	-	27	58	82	106
18,000	12,600	-	-	-	-	8	12	14	-	-	-	-	28	61	97	133
17,500	12,250	-	-	-	-	8	12	14	-	-	-	-	28	63	99	135
17,000	11,900	-	-	-	-	9	13	15	-	-	-	-	29	64	100	136
16,500	11,550	-	-	-	-	9	13	15	-	-	-	-	30	66	102	138
16,000	11,200	-	-	-	7	9	13	17	19	-	-	-	32	68	104	140
15,500	10,850	-	-	-	7	10	13	17	20	-	-	-	33	70	106	142
15,000	10,500	-	-	-	7	11	14	18	21	-	-	-	34	72	108	144
14,500	10,150	-	-	-	8	12	15	19	22	-	-	-	36	74	110	146
14,000	9,800	-	-	-	8	13	16	20	23	-	-	-	37	82	130	178
13,500	9,450	-	-	-	8	13	16	20	24	-	-	-	38	85	133	181
13,000	9,100	-	-	-	9	13	17	21	25	-	-	-	39	86	134	182
12,500	8,750	-	-	-	10	14	18	22	26	-	-	-	42	90	138	186
12,000	8,400	-	-	7	12	16	20	24	28	32	-	-	44	93	141	189
11,500	8,050	-	-	7	12	17	21	25	29	34	-	-	46	97	145	193
11,000	7,700	-	-	7	12	17	21	26	30	35	-	-	48	101	149	197
10,500	7,350	-	-	8	14	18	23	28	32	37	-	-	51	111	171	231
10,000	7,000	-	-	9	15	19	24	29	34	38	-	-	54	113	173	233
9,500	6,650	-	-	10	15	21	26	30	36	41	-	-	57	119	179	239
9,000	6,300	-	-	11	16	22	28	33	38	44	-	-	60	131	203	275
8,500	5,950	-	-	12	17	23	29	35	40	46	-	-	64	139	211	283
8,000	5,600	-	7	13	19	25	31	37	43	49	55	-	68	142	214	286
7,500	5,250	-	8	14	21	28	34	40	47	53	59	-	73	149	221	293
7,000	4,900	-	8	16	23	30	36	43	50	57	64	-	78	161	245	329
6,500	4,550	-	9	17	24	32	40	47	55	62	69	-	84	174	258	342
6,000	4,200	-	11	19	24	36	43	51	60	68	76	-	92	190	286	382
5,500	3,850	-	12	21	23	39	47	56	66	74	82	-	101	203	299	395
5,000	3,500	-	14	23	28	42	52	61	72	80	90	-	110	223	331	439
4,500	3,150	-	15	25	37	47	57	67	78	88	98	-	119	245	365	485
4,000	2,800	7	19	31	43	55	66	79	91	104	115	128	140	285	429	573
3,500	2,450	9	23	37	51	65	79	93	107	123	136	151	165	333	489	645
3,000	2,100	11	28	44	60	76	93	109	126	143	159	176	192	387	567	747
2,500	1,750	14	33	52	71	89	109	128	147	167	185	205	224	448	652	856
2,000	1,400	18	42	65	88	112	136	160	183	207	230	254	276	554	818	1,082

8 Bay 1x1 Units

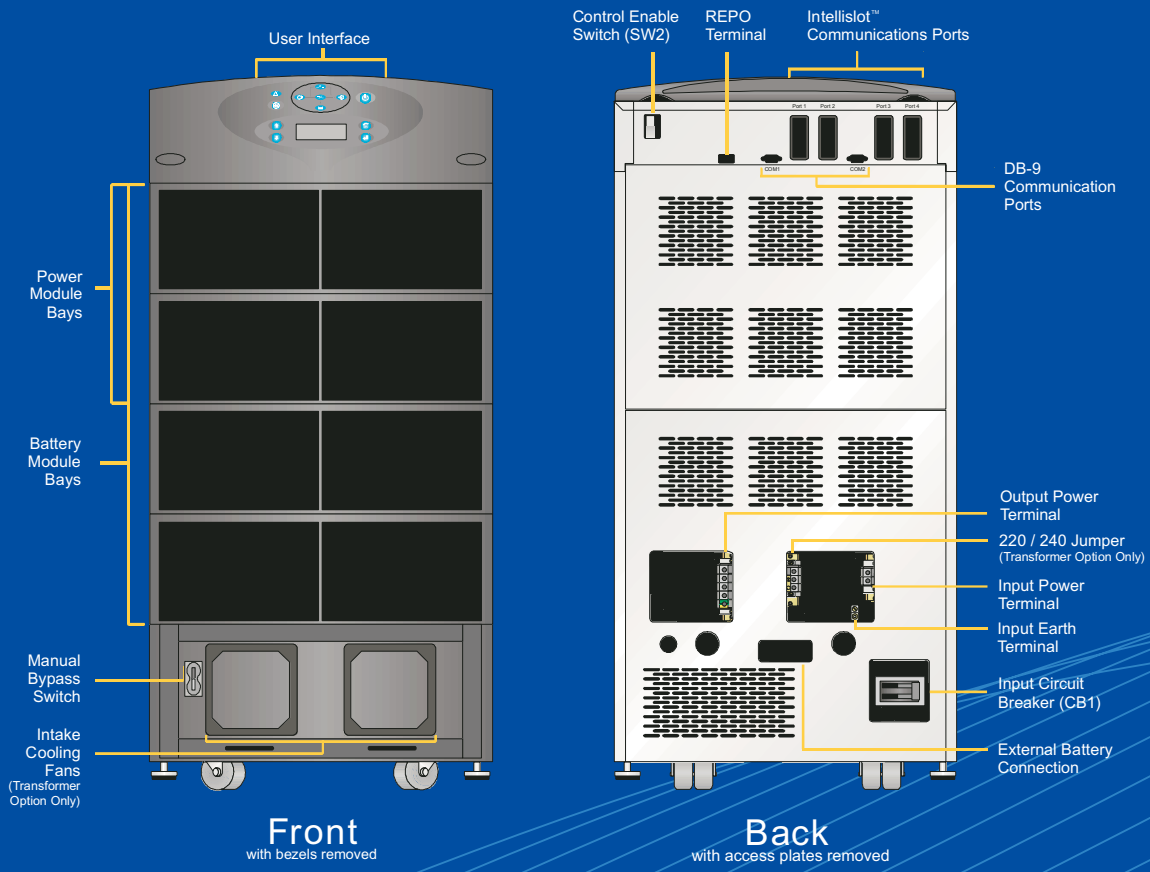
12 Bay 1x1 Units

12 Bay 3x1 Units

NOTE: In Red backup times for 8-Bay units, in Blue backup times for 3x1 (up to 20kVA) units. Backup times are in minutes and are based on resistive loading at an ambient temperature of 25°C under controlled conditions, for non-redundant configurations. Extended battery cabinets are fully loaded with 12 battery modules. Extended battery cabinets assume that the UPS frame is fitted with all available battery modules.

Maximum Protection For Mission Critical Applications

Nfinity is the first redundant UPS of its kind that ships as a complete, pre-configured system that is tested at the factory. Everything you need is included in a single package that's ready to roll-in an hook up.



8 Bay Model Displayed - Also Available: 12 Bay Model, Extended Battery Cabinet

Power Monitoring And Network Shutdown With Multilink Software

MultiLinkTM is the perfect complement to the Liebert Nfinity UPS because it prevents unexpected server shutdowns, protects data and minimizes downtime. The software provides unattended, orderly shutdown for one computer or many, and is especially effective with large server farms. MultiLink has full event management and displays UPS instrumentation on screen. MultiLink is available for all popular operating systems and can be downloaded from the Liebert web at **www.liebert.com.**

General Features

General & Environmental						
Unit Rating	kVA	**4**	**8**	**12**	**16**	**20**
	kW	2.8	5.6	8.4	11.2	14
Conducted and Radiated EMC Levels		EN50091-2 Class A				
Compliant Safety Standards		EN50091-1, EN 60950, CE, Low Voltage Directive				
Compliant Immunity Standards		EN61000 - 4 - 2,3,4,5,6				
		8 Bay			**12 Bay**	
Dimensions: Width	mm	508				
Dimensions: Depth	mm	711				
Dimensions: Height	mm	1016			1372	
Environmental						
Operating Temperature (max)	C°	0°- 40°				
Relative Humidity	%	0 - 95% non-condensing				
Maximum Operating Altitude	m	3000				
Nominal Heat Dissipation	W	311 @ 4kVA	622 @ 8kVa	933 @ 12kVA	1244 @16kVA	1265 @ 20kVA
Acoustic Noise Level	dBA	<62@ 1m				
Input Data						
Nominal Input Voltage	VAC	220/230/240 for 1x1 units 380/400/415 for 3x1 units (12 bay only)				
Power Factor	cosφ	.98 for 1x1 units .80 for 3x1 units				
Input Frequency (nominal)	Hz	50				
Input Frequency Range	Hz	40 - 70				
Battery Module						
Number Of Lead Acid Batteries		10				
Number Of Battery Cells		60				
Battery Capacity	AH	9				
Autonomy Time (full load)	minutes	7 (with an equal number of Battery & Power modules in non-redundant configuration)				
Maximum Charge Current (full load)	A	3				
Nominal Voltage	VDC	120				
Recharge Time	Hr	3 - 5 (90% capacity)				
Output Data	**Units**					
Output Voltage	VAC	220/230/240 (220 requires output transformer)				
Voltage Regulation	%	±3				
Voltage Stability (100% step load)	%	±7				
Recovery Time	msec	96				
Voltage distortion	%	<3% THD linear load <7% THD non-linear load				
Output Frequency	Hz	50				
Efficiency at 100% load	%	91				
Output Overload Capability	%	>100% - 110% for 10 min. 111% - 150% operates for 8 sec 151% - 200% operates for 0.25 sec >201% operates for 2 cycles for 1x1 units			>100% - 110% operates indefinitely 111% - 150% operates for 8 sec 151% - 200% operates for 0.25 sec >201% operates for 2 cycles for 3x1 units	

NOTE: 3x1 units available in 12-Bay frames only. 16kVA 1x1 requires 12-Bay frame. 20kVA rating available for 3x1 models only.

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NFIN 01-12/02/Conte+Oggioni+Partners/Printed in Italy